DOCUMENT RESUME

ED 236 886 EC 161 107

AUTHOR Dick, Marlene A.
TITLE An Individualized Instructional Management System for Vocational Educators of Special Needs Students...Or How Can I Be in 15 Places at Once? LINCpaper 822.
INSTITUTION Missouri Univ., Columbia. Coll. of Education.
SPONS AGENCY Missouri State Dept. of Elementary and Secondary Education, Jefferson City. Div. of Special Education.
PUB DATE 83
NOTE 6p.; The document is a publication of Missouri LINC.
AVAILABLE FROM LINCpapers/Missouri LINC, 609 Maryland, University of Missouri-Columbia, Columbia, MO 65211.
PUB TYPE Guides - Non-Classroom Use (055)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Disabilities; *Individualized Instruction; *Management Information Systems; Models; Student Educational Objectives; *Vocational Education

ABSTRACT

Intended for vocational educators, the monograph analyzes the role of individualized instruction in vocational programing for special needs students. Characteristics of an individualized approach include active learning, instructional objectives, small units, evaluation, and self-pacing. Suggestions are offered for implementing an individualized approach in terms of units of instruction based on job analysis, goals and objectives reflecting entry level to more advanced job skills, a variety of instructional activities matched to the objectives, pre and post assessment devices to measure objectives, a learning environment that facilitates individual learning, and an efficient record keeping system. The final section considers the establishment of an instructional management system to monitor the flow of activities and document the progress of instruction. (CL)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
☑ This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.
• Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
Carl T. Cameron
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

lincpaper
Missouri LINC / University of Missouri-Columbia 822

ED236886

An Individualized Instructional Management System for Vocational Educators of Special Needs Students . . . Or How Can I Be 15 Places at Once?

Marlene A. Dick, M.A.

How can I help Marsha learn to identify tools, John learn to measure, and Eric to operate a machine all at the same time? Develop individualized instruction for each of my students . . . it's impossible!

The words "individualized instruction" conjure up images of 15 or 20 students all raising their hands at the same time, all with different projects and questions and the teacher never getting around to anyone. Is this individualizing? Is it really possible to individualize? If you are to individualize instruction, can you develop a management system to make the process of individualizing easier and more efficient?

This monograph is designed to assist vocational educators to answer some of these often asked questions about individualized instruction. The first part of the monograph describes individualized instruction and its components and the second part of the monograph describes how to set up an instructional management system that facilitates individual or small group instruction in a vocational setting.

Individualization Is . . .

First, let's discuss individualized instruction. According to K.P. Cross (1977), individualized instruction is characterized by the following components.

Active Learning: The learner is actively involved in the learning process. He or she may be solving problems, cycling through learning packages, conducting experiments, etc.

Objectives: The learner is aware of the instructional objectives of the unit. In essence, the learner knows where he or she is going.

Small Units: The learning task is divided into a quantity of short, instructional activities. Often a one-semester curriculum will be broken down into 10-25 units. This allows for mastery of reasonable amounts of material and can prevent student discouragement.

Evaluation: The learner is provided with a range of assessment activities. Pre/post tests, check lists, experiments, hands on, behavioral observations and self report are just a few of the many methods of evaluation.

Self Pacing: The learner has the opportunity to self pace throughout the learning sessions.

Individualizing according to Hamilton (1977) falls within a great range of instructional settings. At one extreme is the completely individualized program of study for vocational students. In such a program, students may enter on any day of the school year and identify occupational goals with the instructor. The students then pursue a selected series of learning experiences on an individual basis to complete those goals and exit the program whenever they have acquired the necessary competencies for their occupation.

Another more common type of individualization can be found within a traditional vocational program. In a traditional program, an established course usually has a number of units of study. Individualization in such a program may take the form of encouraging each student to choose somewhat different assignments within the units of study. This form of individualization can provide students with a variety of activities, laboratory experiences, or learning resources at different levels. It can also allow for individual rates of learning and amounts of

Components of Individualized Instruction

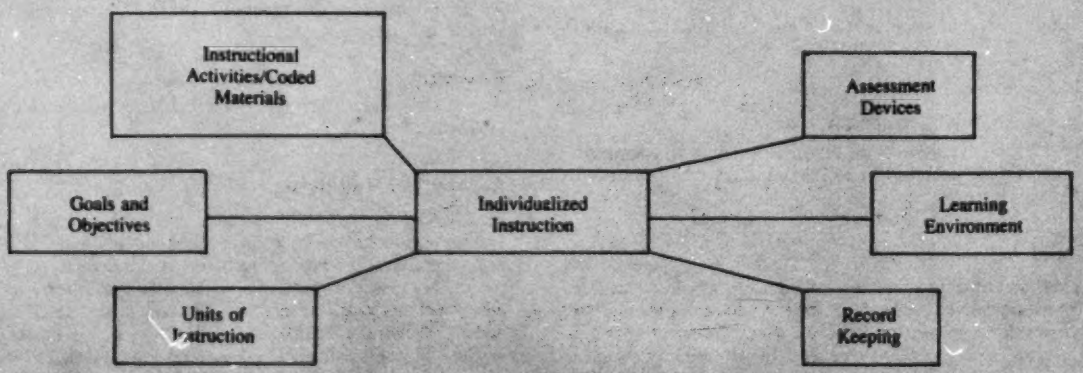

Figure 1.0

EC161107

production. This kind of individualization may be undertaken within the framework of a course based primarily on group instruction.

All approaches to individualizing recognize that learners differ in their aptitudes and rates of learning, styles of learning and behavior patterns and that instruction should be geared to take into account these differences. With this concept as a basis, individualized instruction in vocational education can be defined as a learning program structured and managed to meet the learning needs of each student in a unique way and provide the skills, abilities, and knowledge that will enable the student to enter an occupation.

Components of Individualized Instruction

Meeting the needs and interests of students through individualization is seen by many vocational teachers as a desirable goal, one they would like to accomplish, but implementation often seems overwhelming. How can a teacher make the transition from traditional group instruction to individualization? Here is a possible route to implementation. The first step to implementation is developing the components of individualized instruction which are: units of instruction, goals and objectives, instructional activities and coded materials, assessment devices, a learning environment, and a record keeping system.

Units of Instruction

In vocational training the units of instruction needed to prepare students for available jobs in the community have probably already been identified through job analysis. Oxazo (1976) provides a good summary of the process of job analysis. Briefly, she suggests developing units of instruction by: 1) completing a needs assessment of the jobs, students, and instructional capacity; 2) selecting job families (occupational clusters); 3) determining which occupations are to be included in the program; and, 4) task analyzing the occupations. The following boxes illustrate the components to be developed.

Develop:

Units of instruction identified through job analysis.

Example:

Unit: Safety

Goals and Objectives

The teacher first analyzes the tasks a student will need to perform and then writes measurable goals and objectives. Because students will be preparing for a variety of jobs, i.e., short-order cook to dietetics aide, or tire buster to transmission specialist, there will be a wide range of goals and objectives developed. Goals and objectives will, therefore, reflect entry level to more advanced job skills. Objectives should be written so that the expected student performance is measurable. This is often described as mastery learning and allows students and teachers to know when an objective has been learned satisfactorily or to a level which will permit students to succeed on more difficult objectives.

Develop:

Goals and objectives that are measurable and identified through task analysis.

Example:

Goal 1.0. learn safe use of equipment in lab.

Objective 1.1. the student will be able to set up and operate the machine with 100% accuracy, i.e., using all safety procedures demonstrated by instructor.

Instructional Activities

Once goals and objectives are developed a variety of instructional activities for the objectives can be developed. As an example, to master an objective in safety, students might read a chapter, watch a filmstrip, learn the skill from a peer, repeat a teacher demonstration, or complete a learning packet. Instructional materials to be used with the activities can be identified and matched to the objective. Materials will be needed which have a range of ability levels to meet different students' abilities. Make a list of activities and the materials that meet the course objectives and code the materials by ability level. An example would be a material such as a learning packet for the objective to operate a machine and the material would be coded with an ability level "3" for third grade reading level.

Develop:

A variety of instructional activities for each objective coded for ability level by grade.

Examples:

Activities for objective 1.1:	Ability Level
Read chapter 1	5
Watch Filmstrip #14	1
Complete learning packet "Safety in the Lab"	3
Repeat teacher demo	any level

Assessment Devices

The next step is to develop pre and post assessment devices to measure objectives. The assessment devices are developed to complement the selected activities and materials. Preassessment quizzes or activities will help identify which skills a student already has and which skills she/he will need to acquire. Preassessments also serve to motivate students and guide them through the learning activities. Post assessment devices evaluate students' mastery of the objective. Assessment devices don't necessarily have to be written tests. They can be such activities as verbal quizzes, student demonstrations of a skill, teacher observation, or examination of a student made product.

Develop:

Pre & Post Assessments that measure objectives and motivates students.

Examples:

Verbal quiz	Checklist
Written quiz	Product
Hands-on demonstration	Other

Learning Environment

Probably one of the more important components of individualizing is creating a physical environment that facilitates individual learning. Set up learning/work centers where students can work on various units of instruction, i.e., brakes, electrical systems. Develop job sheets that inform a student of the learning objectives, the activities to be completed, the materials and resources to be used, and the evaluation procedures for a unit (Figure 2.0). Activities on a job sheet can be chosen by the instructor, student, or both. Have student-use materials accessible to students; this encourages student independence. Structure the class so that students enter the lab or class, obtain job sheets and materials, and go to the work center to begin working each day.

Develop:

An environment of learning/work center, job sheets and accessible student use materials.

Example:

Work center for safety unit with machines, tools and student use materials ready for student to use.

Record Keeping System

The last component to develop is a record keeping system. The system will include a folder for each student containing his/her goals and objectives, corresponding instructional activities, materials and pre and post assessment results. Master listings for teachers of all goals and objectives for the course with corresponding instructional activities and coded instructional materials will also be part of the record keeping system. Teachers can quickly develop the individualized student folder and job sheets from these master listings.

JOB SHEET

Unit. Safety

Goal 1.0 Learn safe use of equipment in lab.

Objective 1.1 The student will be able to set up and operate the machine with 100% accuracy, using all safety procedures demonstrated by the instructor.

		date started	date completed
Activities:	To learn how to operate the machine, choose and complete one or more of the following, with your instructors help:		
1.	Read chapter 1 in textbook and answer questions at end of chapter. Have the instructor check your answers when finished.	_____	_____
2.	Watch filmstrip #14 (in filmstrip cabinet). Instructor will ask you 5 questions when you finish watching the filmstrip.	_____	_____
3.	Complete learning packet "Safety in the Lab" (in file drawer #3). Complete the checklist in the packet and give it to the instructor.	_____	_____
4.	Watch the teacher demonstrate how to operate the machine; then practice doing it with another student.	_____	_____

		yes	no
Evaluation:	Student was able to:		
	Set-up, start, operate and turn off machine correctly.	_____	_____
	Practice and describe all safety procedures demonstrated by instructor and learned in activities.	_____	_____

_____ _____

Student Instructor

Figure 2.0

Develop:

Record keeping system with student folders and teacher master listings.

Example:

Student folders: His/her goals and objectives, activities, materials, pre & post test results.

Master listings: All goals and objectives with corresponding activities and coded materials.

The management components of an individualized system—goals and objectives, coded materials, instructional activities, assessment devices, a learning environment, and record keeping—are in place. These components are often developed by teachers providing regular instruction in any classroom. The difference in using them to individualize is the end goal of allowing individuals or small groups of students to work on self-paced activities at different times toward mastery learning for each student (Good, 1978).

Instructional Management System for Individualization

The next step is to use the components to set up an instructional management system which will facilitate instruction of individual students or groups of students. An instructional management system (IMS) is an approach to organizing instruction and managing learning. The purpose of this emphasis on managing instruction more precisely is to guarantee that:

a) learning objectives for each subject and grade level are clearly defined and coordinated;
b) all students are given the time they need to master the objectives, particularly those objectives which are considered essential;
c) teachers, parents and students can know, with greater accuracy, what has been achieved and what remains to be done.

Although the concept of an IMS is not new, recent research has produced evidence that the techniques used with the IMS approach can yield impressive gains in student achievement and in students' attitudes toward learning (Missouri Schools, 1982).

An individualized instructional management system involves developing a process for using the components of individualization previously discussed. The process developed would allow students to easily move through pre-assessment, activities, and post assessment with limited guidance from the instructor. The process would allow the instructor to more easily manage a number of students working independently, possibly even allowing a teacher to be 15 places at once. The management system is the flow of activity and documentation of instruction.

Figure 3.0 illustrates the flow of instructional activity in an individualized instructional management system.

1. As a student enters class, decisions are made as to what goals and objectives she/he will work toward mastering. This will be determined by factors such as a student's IEP, interests, aptitudes and job goals. Students and teachers can discuss these together and even enter into a contract describing the goals, objectives, and expected outcomes. If several students select the same objectives and have similar ability levels, they can be grouped for instruction.
2. The student is pre-assessed to determine skills and knowledge she/he has or needs to acquire. The selected goals and objectives and results of the pre-assessment are recorded in the student's folder.
3. Instructional activities and materials are selected that appropriately match a student's ability level and the objectives she/he is working toward mastering. The teacher's listing of coded materials is used to identify materials that match each objective, instructional activity, and ability level.
4. The student then accesses the learning environment using learning/work centers, materials, job sheets, etc., to complete instructional activities.
5. Once a student or group of students have completed instructional activities, assessment of level of mastery is necessary. If mastery to criterion has not been accomplished, reteaching in the form of additional or repeated instructional activities may need to take place. To encourage retention of learned skills, additional opportunities for application/practice may also be part of the instructional sequence at this point. If mastery to criterion has been met students, move on to the next goal or objective to be mastered.

Summary

You may have noticed that the previous sequence of instructional activities are already present in the everyday routine of many classrooms. The difference is having the components well established into a system of management so that the teacher can act as a manager of a variety of learning activities and resources rather than a single instructor providing the same instruction to a group of students.

LINCpaper Monographs

801 *Mainstreaming Visually Impaired Students into Vocational Classes*
Through a question/answer format a blind consultant and a vocational educator address many of the concerns of a regular classroom teacher.

802 *Post-Secondary Programs for the Deaf and Hearing Impaired*
Useful for counselors this paper provides programming information on hearing impaired programs throughout the United States.

803 *Developing a Vocational Curriculum and Adapting Instructional Materials*
This paper provides a model for developing a secondary level curriculum in all vocational areas and includes a checklist for selecting and procedures for rewriting materials.

811 *Manual Communications Training: Clerical Vocabulary*
Useful for educational personnel serving deaf students, this dual format paper is a poster illustrating manual clerical signs used in an office setting. A procedure for determining important vocabulary is provided as a model which is applicable to any vocational area.

813 *Implementing Work Study Programs for Handicapped Students*
This paper describes work study, the Missouri Cooperative Agreement, the role of the Vocational Adjustment Coordinator, and how to develop, implement and evaluate a special education work study program.

814 *Education for the Handicapped in Rural Areas*
This paper addresses the problems associated with programming in rural areas and offers possible solutions as well as resources.

821 *A Resource Guide for Providing Vocational Education for Handicapped Students in Missouri*
This paper describes ways to deliver vocational training to handicapped students, how to develop a total program, and a listing of resources.

822 *An Individualized Instructional Management System for Vocational Educators of Special Needs Students. . . . Or How Can I Be 15 Places at Once?*
Useful for vocational educators considering individualized instruction, this paper describes management system that can facilitate the process.

823 *Alternatives in Evaluation and Grading of Special Needs Students*
This paper describes modifications and procedures that can keep educators evaluate special needs students in the classroom.

Please send me the following LINCpapers:

___801; ___802; ___803; ___811; ___813; ___814; ___821; ___822; ___823.

Name _____

Street _____

City _____

State _____ Zip_____

Detach and mail in envelope to: LINCpapers/Missouri LINC
609 Maryland
University of Missouri-Columbia
Columbia, MO 65211

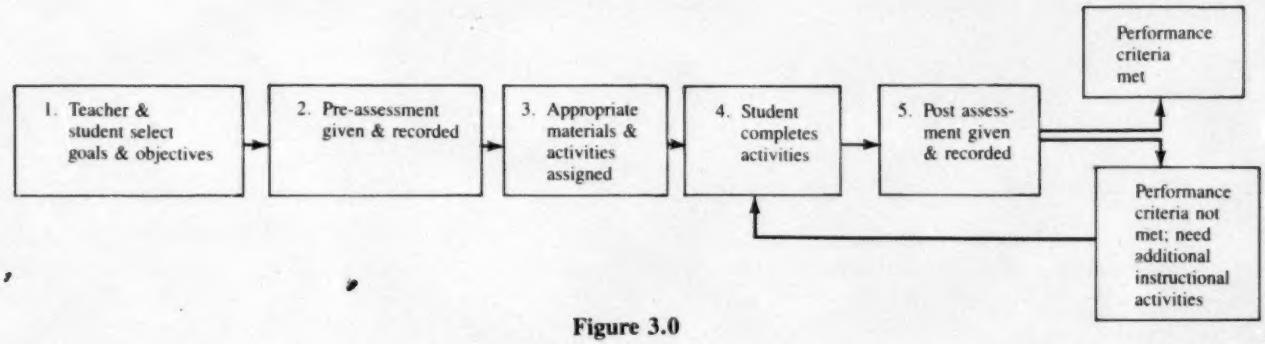
1. Teacher & student select goals & objectives
2. Pre-assessment given & recorded
3. Appropriate materials & activities assigned
4. Student completes activities
5. Post assessment given & recorded
Performance criteria met
Performance criteria not met; need additional instructional activities

Figure 3.0

When 15 students enter a class, the teacher/manager or student can pull the student's file and see what objectives, activities, and materials each student is working on that day. Each student can then access materials, go to the work center to begin work using job sheets (or similar self-guided directions) and ask questions as needed. The teacher/manager is immediately free to circulate among students or groups, demonstrating, answering questions, evaluating, observing and interacting with the students.

At the end of the class, students can put away materials, clean up work areas, evaluate and record the day's learning with the teacher. At this time the teacher and student identify what the student will continue to work on the next day, thus preparing a student to come in ready to work on the following day.

An individualized instructional management system such as the one described above, if implemented, can:

1. Assist students to learn what is taught in a vocational classroom or lab at a satisfactory level.
2. Assist students to be motivated and maintain an interest in learning by working at a rate that allows mastery and a high degree of success.
3. Assist teachers to provide instruction and activities that meet individual needs.
4. Assist teachers to organize and manage a variety of activities in a classroom at the same time.

Instruction changes from day to day and teacher preparation of new courses and learning activities occurs constantly in any good classroom. As these changes are made and courses developed, individualized instruction and a system of management can be gradually built into any vocational program. Start with one unit at a time, gradually developing a range of activities and materials, and a learning environment that facilitates learning to meet each student's needs. Individualization, with a system of management, isn't impossible and can often prove to be extremely effective in training and motivating the wide variety of students that are in all vocational classes.

Bibliography

Cheek, M.C. and Cheek, E.C. *A guide for classroom teachers: Diagnostic and prescriptive reading instruction.* Dubuque, Iowa: William C. Brown Co., 1980.

Good, T. L. and Brophy, J.E. *Looking in classrooms.* New York: Harper and Row, 1978.

Hamilton, J.B. Individualize instruction module c-18 of category c—*instruction execution professional teacher education module series.* Columbus, Ohio: The Center for Vocational Education, 1977. ED 149082.

Impellitteri, J.T. and Fincher, C.R. *Review and synthesis of research on individualizing instruction in vocational and technical education.* Columbus, Ohio: ERIC Clearinghouse on Vocational and Technical Education, 1971.

Kabe, J.R. Putting theory into practice. *Vocational Education,* 1981, 56(2), 36-38.

Otazo, K. and others. *Identifying and improving vocational instruction: A handbook for individualized instruction for New Hampshire vocational educators.* Keene, New Hampshire: Keene State College, 1976. ED 156851.

Pucel, D.J. Models for individualizing vocational-technical instruction. (Paper presented at the American Vocational Association Convention, December, 1974). ED 139983.

Pucel, D.J. and Knaak, W.C. *Individualizing vocational technical instruction.* Columbus, Ohio: Charles E. Merrill Publishing Co., 1975.

Questions and answers about IMS. *Missouri Schools,* 1982, *48*(2), 5-7.

About the Author:

Marlene Dick is coordinator of Publications for Project LINC and a doctoral student in Vocational Education for the Handicapped at UMC. She worked with individualized instruction for special needs students in an instructional management system for six years in Kansas City.

MissouriLINC operates within the University of Missouri-Columbia Departments of Special Education and Practical Arts and Vocational-Technical Education, College of Education. It is funded through the Missouri Department of Elementary and Secondary Education, Division of Special Education, in cooperation with the Division of Vocational Education, Vocational Special Needs Programs. It is through the concern of DESE that this project is available to provide these services at no charge to the public school personnel in the state of Missouri.